

REMARKS

Claims 1-9 and claims 19-24 have been amended to distinguish over Hohn et al EP 1,094,207. These claims now cover the Figure 6 and 7 embodiment and provide that the outlet pipe of the internal core assembly connects directly to the exhaust entry pipe of the internal core assembly while allowing controlled expansion between the exhaust entry pipe and the outlet pipe. Claims 10-18 and 24-27 have been canceled. Claims 1-9 and 19-24 remain in this application and stand for examination. Reconsideration and re-examination are requested in view of today's amendments and in view of the comments made hereinafter.

Priority under 35 U.S.C. 119(b)

The Examiner's comments as to the claim for priority are noted. Applicant intends to file certified copy of the corresponding Canadian application shortly.

Objections of the claims

The Examiner objects to claims 10, 12 and 13 as being redundant. By today's paper, claims 10, 12 and 13 have been canceled, without prejudice.

Rejection of claims 1-27 for anticipation

The Examiner rejects claims 1-27 under 35 U.S.C. 102(b) as being anticipated by Hohn et al European Document 1 094 207.

The Hohn et al reference is dissimilar to the present invention. Whereas the muffler according to the present invention relates to cars and boats with four cycle engines, Hohn et al is concerned with small two cycle engines as is apparent from his specification (see paragraph [0003]). As a result, the Hohn et al teachings contribute nothing to emissions applications for four cycle engines used in cars and boats.

For the last twenty(20) years or so, catalytic converters have been required on automobiles and removing or tampering with such catalytic converters is prohibited. The catalytic must operate to specifications which are rigorous and which must function without servicing often for some one-hundred-thousand(100,000) miles. Hohn et al mount their "end terminator" or silencer at the end of an exhaust chain as a muffler tip and there is no provision made for mounting between or ahead of other exhaust components as it is the sole silencer or muffler used. Since Hohn et al mount their silencer at the end of the exhaust chain, if it was to be used in a car, it would have to be mounted ten to fifteen feet or more from the engine. This position exposes the muffler to far cooler temperatures than the temperatures under which the present muffler is operated. The cooler temperatures dictate that the Hohn et al muffler is useless for any catalytic function in automobiles since catalysts only begin working at a temperature above approximately 200 deg.C. In normal stop and go driving in an automobile, it is likely that the Hohn et al silencer will be dripping water and be soaking wet. It therefore is operated at a temperature nowhere near where a catalytic process must function in an automobile.

The present invention does not require a catalytic process for operation and is not intended to function in a catalytic manner. Rather, the present invention is intended to implement supplementary technologies to remove contaminants that still exist following catalytic converter treatment. Thus, it is a supplementary exhaust treatment as opposed to Hohn et al who teach a primary (and only) exhaust treatment. Hohn et al also teach a monolithic catalytic material mounted coaxially in a removable tailpipe assembly. Attempting to use the Hohn et al silencer in an automobile with even a modest sized engine would require a very large tailpipe, perhaps six(6) inches in diameter, to avoid significant back-pressure that would inhibit engine operation.

More specifically, Hohn et al teaches a straight-through design as a silencer. Hohn et al do not take advantage

of resonant effects taught by "split-pipe multi cavity" muffler technology. Such resonant effects are used for far more efficient silencing which effects are not reached by a straight-through muffler as is evident when one considers the straight-through mufflers used on hot rods or high performance engines where silencing is not desired.

The technology according to the present invention does not teach a straight through design. In Figures 6 and 7, the inlet and outlet pipes terminate at the center bulkhead and the exhaust is made to flow around and through holes in the periphery of the bulkhead.

By today's paper, claims 1 and 19 have been amended to require the expansion of the exhaust gases between the inlet and the outlet as well as requiring the exhaust entry pipe of the internal core assembly to be connected directly with the outlet pipe. Hohn et al do not teach exhaust entering their exhaust entry pipe and leaving by their outlet pipe. Rather, the exhaust in Hohn et al leaves the exhaust entry pipe, flows around the outside of the exhaust pipe (of the internal core assembly) and out the hole formed by the connection of the pipe 42 with outlet plate 41 (see Figure 6).

In view of the above, it is submitted that the claims should now fully distinguish over Hohn et al and should therefore be in condition for allowance. Reconsideration and withdrawal of the objections and rejections is requested and allowance of claims 1-9 and 19-24 is solicited.

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Respectfully submitted,

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